

WHAT IS CLAIM IS:

1. A method for a data loss detection in a wireless communication process comprising the steps of:

(a) receiving a wireless signal carrying a data frame by a wireless signal receiving apparatus, wherein said data frame includes a field containing a first data value representing a sequence number of said data frame, and said wireless signal receiving apparatus records a second data value representing a sequence number next to that of the last data frame being received by said wireless signal receiving apparatus; and

(b) comparing whether said first data value is identical to said second data value, so as to determine whether said data frame is lost during said wireless communication process.

2. The method of claim 1 further comprising the steps of:

(c) if said first data value is different from said second data value, generating an alarm signal by said wireless signal receiving apparatus;

(d) increasing said second data value recorded in said wireless signal receiving apparatus by one; and

(e) decoding a data packet contained in said data frame into a series of output data signals, and transmitting said output data signals by said wireless signal receiving apparatus to a host.

3. The method of claim 2 wherein said step (c) further comprises the steps of:

(c1) if said first data value is different from said second data value, transmitting a request signal to a wireless input apparatus to request said wireless input apparatus to retransmit said data frame to said wireless signal receiving apparatus.

4. A method for a data loss recovery in a wireless communication process comprising the steps of:

(a) receiving a wireless signal carrying a data frame by a wireless signal receiving apparatus, wherein said data frame includes a field containing a first data value representing a sequence number of said data frame, and said wireless signal receiving apparatus records a second data value representing a sequence number next to that of the last data frame being received by said wireless signal receiving apparatus;

(b) comparing whether said first data value is identical to said second data value, so as to determine whether said data frame is lost during said wireless communication process; and

(c) if said first data value is different from said second data value, transmitting a request signal to a wireless input apparatus to request said wireless input apparatus to retransmit said data frame to said wireless signal receiving apparatus.

5. The method of claim 4 further comprising the steps of:

(d) increasing said second data value recorded in said wireless signal receiving apparatus by one; and

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(e) decoding a data packet contained in said data frame into a series of output data signals, and transmitting said output data signals by said wireless signal receiving apparatus to a host.

6. A wireless communication system comprising:

a wireless input apparatus which is operable to receive an input data signal and encode said input data signal into a data frame for transmission by a wireless signal, wherein said data frame includes a field containing a first data value representing a sequence number of said data frame;

a channel for transmitting said wireless signal; and  
a wireless signal receiving apparatus which is operable to receive said wireless signal from said channel and record a second data value representing a sequence number next to that of the last data frame being received by said wireless signal receiving apparatus, wherein said wireless signal receiving apparatus compares said first data value with said second data value to determine whether said data frame is lost, and generates an alarm signal if said first data value is different from said second data value.

7. The system of claim 6 wherein said wireless input apparatus includes an input interface for allowing a user to enter said input data signal and an input buffer for storing said input data signal therein.

8. The system of claim 7 wherein said input buffer comprises a first-in first-out buffer.

9. The system of claim 6 wherein said wireless input apparatus further includes a microcontroller having an encoder for encoding said input data signal into said data frame.

10. The system of claim 6 wherein said wireless input apparatus further includes a wireless communication transmitting module for transmitting said wireless signal to said wireless signal receiving apparatus through said channel..

11. The system of claim 6 wherein said wireless input apparatus further includes a memory for recording said data frame transmitted by said wireless input apparatus.

12. The system of claim 11 wherein said memory is a first-in first-out memory.

13. The system of claim 6 wherein said wireless signal receiving apparatus includes a wireless communication receiving module for receiving said wireless signal from said channel.

14. The system of claim 6 wherein said wireless signal receiving apparatus further includes a microcontroller having a decoder for decoding a data packet contained in said data frame into a series of output data signals.

15. The system of claim 6 wherein said wireless signal receiving apparatus further includes a register for storing said second data value therein.

16. The system of claim 6 wherein said wireless signal receiving apparatus further includes an alarm signal generator for generating said alarm signal.

17. The system of claim 16 wherein said alarm signal generator is a buzzer.

18. The system of claim 6 further comprising a host which is connected with said wireless signal receiving apparatus by a cable for receiving and processing said output data signals.

19. The system of claim 18 wherein said host is a personal computer.

20. A wireless communication system comprising:

a wireless input apparatus which is operable to receive an input data signal and encode said input data signal into a data frame for transmission by a wireless signal, wherein said data frame includes a field containing a first data value representing a sequence number of said data frame;

a channel for transmitting said wireless signal; and  
a wireless signal receiving apparatus which is operable to receive said wireless signal from said channel and record a second data value representing a sequence number next to that of the last data frame being received by said wireless signal receiving apparatus, wherein said wireless signal receiving apparatus compares said first data value with said second data value to determine whether said data frame is lost, and generates a request signal to said wireless input apparatus to request said wireless input apparatus to retransmit said data frame if said first data value is different from said second data value.

21. The system of claim 20 wherein said wireless input apparatus includes an input interface for allowing a user to enter said input data signal and an input buffer for storing said input data signal therein.

22. The system of claim 21 wherein said input buffer comprises a first-in first-out buffer.

23. The system of claim 20 wherein said wireless input apparatus further includes a microcontroller having an encoder for encoding said input data signal into said data frame.

24. The system of claim 20 wherein said wireless input apparatus further includes a wireless communication transmitting module for transmitting said wireless signal carrying said data frame to said wireless signal receiving apparatus through said channel, and a wireless communication receiving module for receiving said request signal.

25. The system of claim 20 wherein said wireless input apparatus further includes a memory for recording said data frame transmitted by said wireless input apparatus.

26. The system of claim 25 wherein said memory is a first-in first-out memory.

27. The system of claim 20 wherein said wireless signal receiving apparatus includes a wireless communication receiving module for receiving said wireless signal carrying said data frame from said channel, and a wireless communication transmitting end for transmitting said request signal.

28. The system of claim 20 wherein said wireless signal receiving apparatus further includes a microcontroller having a decoder for decoding a data packet contained in said data frame into a series of output data signals.

29. The system of claim 20 wherein said wireless signal receiving apparatus further includes a register for storing said second data value therein.

30. The system of claim 20 wherein said wireless signal receiving apparatus further includes an alarm signal generator for generating said alarm signal.

31. The system of claim 30 wherein said alarm signal generator is a buzzer.

32. The system of claim 20 further comprising a host which is connected with said wireless signal receiving apparatus by a communication cable for receiving and processing said output data signals.

33. The system of claim 32 wherein said host is a personal computer.

34. A data frame format to be used in a wireless communication system, wherein said data frame at least includes a data packet and a field containing a data value representing a sequence number of said data frame which enables said wireless communication system to detect whether said data frame is lost during a wireless communication process.

35. The data frame format of claim 34 wherein said data frame further includes a field containing an error detection

code based on the data values within in said data packet which is to be analyzed to detect errors within said data packet.

36. The data frame format of claim 35 wherein said error detection code contains a checksum data value.

37. The data frame format of claim 35 wherein said error detection code contains a parity check data value.

38. The data frame format of claim 35 wherein said error detection code contains a cyclic redundancy check data value.